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UNITED STATES DISTRICT COURT

DISTRICT OF OREGON

CASCADIA WILDLANDS; OREGON WILD; UMPQUA WATERSHEDS,

Plaintiffs,

v.

U.S. BUREAU OF LAND MANAGEMENT,

Defendant,

and

AMERICAN FOREST RESOURCE COUNCIL and **ASSOCIATION OF O&C COUNTIES**,

Defendant-Intervenors.

Case No. 6:24-cv-01641-MTK

DECLARATION OF SEAN JERONIMO

I, Sean Jeronimo, declare and state as follows:

1. I am a Forest Analyst with the U.S. Bureau of Land Management ("BLM") State Office for Oregon and Washington ("OR/WA"). I have served in this position since December 4, 2022. Prior to that, I was the Principal Ecologist for Resilient Forestry, a forest management consulting company. I hold a Bachelor of Arts degree in Mathematics (granted in 2012), a Master of Science degree in Forest Management (granted in 2015), and a PhD in Forest Ecosystem Analysis (granted in 2018), all from the University of Washington in Seattle, WA.

2. As a Forest Analyst for OR/WA BLM, I set standards and manage data quality for BLM's forest inventory across Oregon and Washington and make use of the inventory data for state-level strategic planning efforts. The datasets I manage include a strategic plot-based inventory which is installed in a grid across all of western Oregon (the Forest Inventory and Analysis dataset), tactical plot-based inventories which are installed in grids across many project planning areas in western Oregon during project development (the EcoSurvey dataset), a complete stand-based inventory that records stand boundary locations and summary attributes across all of western Oregon (the Forest Operations Inventory dataset), and various other datasets that record the BLM's forestry management activities

across all of western Oregon (together with the Forest Operations Inventory, this is known as Micro*Storms).

3. I am knowledgeable about the Plaintiffs' challenge in this litigation. I understand that Plaintiffs raise concerns about BLM's process of aging stands generally and on the Blue and Gold Project specifically, alleging that BLM mis-aged stands within the Project Area. I understand that Plaintiffs also make allegations related to the use of stand age data in defining the location of the Late Successional Reserve Land Use Allocation (LSR) and allegations related to the amount of volume available in trees that BLM is legally permitted to harvest. In this declaration, I first discuss BLM's process for aging stands and how it relates to the allegations of mis-aging. Then, I discuss the allegations related to LSR and available volume.

4. Micro*Storms is BLM's repository of record for data related to forestry treatments, surveys, and forest stand information. AR_03565. As mentioned above, one component of Micro*Storms is the Forest Operations Inventory (FOI) database. This database contains both spatial and tabular components. AR_02896. The spatial component is composed of one record for each forest stand managed by BLM in western Oregon, delineating the boundaries of the stand as a polygon occupying a specific location on the Earth's surface. The tabular component is composed of many records for each forest stand that provide a general summary of forest conditions in terms

that are operationally useful to BLM foresters in their day-to-day implementation of BLM's forestry program. AR_02896; AR_03584. One piece of information recorded in the tabular data is the 10-year age class of the stand. AR_02915.

5. The purpose of attributing a stand with a single number representing its age is to allow BLM resource management staff to efficiently filter through the FOI spatial database for preliminary identification of management needs or opportunities. The practice of assigning a single age to a forest stand dates to at least the early 1900s and BLM's FOI dataset recording stand age dates to the 1940s, so BLM staff are generally familiar with longstanding conventions around what kind of management occurs in stands of different ages. In practice, BLM staff are usually aware that the stand age is a simplification and that additional fieldwork is required to fully understand the demography of a stand before management actions are implemented.

6. The process by which BLM ages a stand includes the steps of stand delineation, classification of one or more vegetative layers within the stand, identification of which layer is the primary focus for management, and derivation of the present age of that management layer. This process is implemented by BLM forestry field staff and guided by the forest inventory lead for each BLM District, who is usually also the District silviculturist

(hereafter "BLM forester"). Each step involves making calls based on professional judgment with an orientation toward producing useful information for the BLM forestry program.

7. To understand the amount and kinds of judgment required, it is helpful to view the problem of stand aging as a series of classification tasks. Classification involves converting something that occurs as a continuous gradient into a representation in terms of discrete chunks. Thus, classification is inherently simplifying: some information is discarded so that the remaining information is more useful. To give a well-rounded understanding of the stand aging process, I will discuss each step in turn, pointing out the simplifications that are necessary to complete the steps.

8. For the purposes of FOI, BLM defines a stand as a polygon that captures "classified forest vegetation as well as the ability to operate within the unit for treatments and/or harvest," with "the primary focus on classifying forest vegetation and the secondary focus on operations." AR_03584. The classification of forest vegetation aims to identify "a community of trees sufficiently uniform in species composition, age, arrangement, and condition to be distinguishable as a group from the forest or other growth in the adjoining area, and thus forming a silviculture or management unit." AR_03584.

9. Due to the highly varied topography and climate of BLM-administered lands in western Oregon, the conditions for both forest vegetation development and forest operations exhibit large variation at many spatial scales. The same tract could be split into stands in several different ways and it would not be possible to call any of the iterations "incorrect;" instead, some iterations would be more useful for certain tasks than other iterations. For example, a forester delineating stands in a forest tract that is primarily managed for watershed purposes would likely split stands by focusing on features related to water quality and yield, such as snow-holding potential (based on the density and spatial arrangement of trees) and erosion potential (based on soils). In contrast, in a forest tract that is primarily managed for wood fiber production, a forester would more likely focus on creating stands that can efficiently be logged using the same equipment across the whole unit with minimal setup and moving time. Since FOI is a mature dataset, BLM foresters typically do not delineate new stands, but modify the existing stand polygons to improve accuracy and realign boundaries with changes that occur over time.

10. BLM's management under the western Oregon Resource Management Plans (RMPs) is focused on multiple uses that must be balanced in different ways depending on the location. AR_07817. Thus, the forester conducting the delineation must exercise his or her judgment to match the

factors driving delineation with the balance of multiple uses. In doing so, the forester must choose which information to incorporate and which to discard so that the product is a useful delineation.

11. Once BLM delineates a stand, it must classify and characterize one or more vegetative layers within the stand. The FOI dataset is able to record up to three layers – top, middle, and bottom – and at least one is required to be entered. AR_02904. Additionally, one of the three layers must be identified as the "age class layer." This is defined as the layer that hosts "the dominate[*sic*] vegetation type which the stand is primarily being managed for." AR_02915-02916.

12. In reality, forest stands are often not organized into discrete and easily identifiable layers. In fact, the RMPs intentionally encourage the development of multi-aged stands with the exact kind of structural complexity that would make it challenging to classify layers. AR_07817; AR_07839. The BLM forester performing the classification can reference a variety of data to determine stand layering and select an age class layer. Prominently, when stand exams are conducted using EcoSurvey, each tree is labeled with a value of 1, 2, or 3 corresponding to the top, middle, and bottom canopy layers. AR_040265. In the absence of stand exam data, the forester may use aerial photos, aerial laser scans, Micro*Storms, or older records kept in hard-copy "timber atlases." In any event, the forester uses his or her

judgment and knowledge of the stand's history and planned future management to classify layers based on their ecological functions in the context of BLM's management. For example, in an uneven-aged stand one may classify a top layer occupied by a low density of large trees that supports wildlife nesting, a middle layer occupied by a relative high density of medium-sized trees that will provide timber in the near future, and a bottom layer occupied by a moderate density of small trees that will provide replacements for harvested trees in the future. If the stand were designated by the RMPs for management emphasizing timber harvest, then the forester might choose to set the middle layer as the age class layer, since that layer dominates in terms of supporting the functions for which the stand is primarily managed.

13. As in stand delineation, classifying the forest canopy into one to three distinct layers and selecting just one of these layers to represent the stand's age requires the forester to choose which information to incorporate and which to discard so that the product is as useful as possible for the tasks at hand.

14. Having narrowed the problem down to a single layer within the stand, it still remains to derive the layer's birth year, among other attributes. AR_02904. It is exceedingly uncommon that every tree within a layer shares the same birth year. Even in a stand with a single layer of trees planted all at

the same time, natural seeding will usually introduce additional trees that have different ages than the planted trees. In stands of natural origin – which are common through BLM-administered lands in western Oregon – it is usual for a stand that appears relatively uniform to actually be composed of trees that established throughout a 20- to 50-year window of time. Many natural-origin stands have multiple such cohorts of trees with overlapping establishment windows so that the birth dates of the individual trees within the stand span hundreds of years of time.

15. No matter the case, the BLM forester classifying the stand is required to choose a single year to represent age for the layer (and, ultimately, the whole stand). In doing so, the forester must exercise judgment and expertise to select an age that best indicates the management options available for the stand. When stand exam data are available, the forester may choose to use the age reported by EcoSurvey. AR_04000-4004. They also may choose to modify that age based on professional judgment. As with the prior steps, the choice of age requires the forester to discard information by collapsing the full distribution of individual tree ages into a single number to represent the stand.

16. Through this process, BLM arrives at a "stand age," which ultimately is just one single number despite the fact that nearly every stand contains a variety of tree ages within it. To arrive at this single number, a

BLM forester is required repeatedly to use professional judgment and expertise to winnow away a large amount of information.

17. This call on "stand age" will result in an age determination that is usually younger than the oldest trees in the stand, especially when the oldest trees are a relict of a former stand, such as survivors of an old fire.

18. In the Blue and Gold EA, BLM Roseburg followed this exact process to age stands. Roseburg installed over 1,200 stand exam plots across the Blue and Gold planning area and used that field-collected data to validate the FOI stand ages. The resultant ages are listed among other forest stand attributes derived from stand exams in Table I-1 of the EA. AR_00368; AR_00527. The management units were refined during the planning process, based in part on the stand exam data. After this, 724 plots remained within the final set of units. The stand exam point geospatial data is publicly available here: https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-or-stand-exam-publication-point-hub/about.

19. The stand exam data is included in the Administrative Record in several formats. First is the complete tree list, which includes the data recorded for each tree, plot, and unit. AR_01490-02137. In this document it is possible to see each aged tree. Not every tree is aged in the field because coring trees and counting rings is time-consuming. Thus, the ages are

recorded only on a representative subsample of trees. This report also indicates the canopy layer determinations made in the field.

20. A second report is given that describes the number and volume of merchantable-sized trees. AR_05212-05372.

21. Third is the plot-level summaries, which includes data for each plot and unit. AR_05935-06110. These reports detail the plot averages of various metrics and list the Timber Type for each plot (for interpretation of Timber Type, *see* AR_04084-04089). The Timber Type summarizes the layers and their birth years. The Timber Types listed for plots are not very reliable, since plots are small samples.

22. Fourth is the stand condition summary, which summarizes the plot data to the unit level. This summary also contains the Timber Type, but is more reliable than the plot-level Timber Type because it represents a larger sample spread throughout the stand. AR_05081-05211.

23. Fifth is the stand table by species summary, which shows the density and volume of trees by species and diameter class within each unit. AR_04899-05080.

24. Sixth is the merchantable tree summary, which shows essentially the same information as the stand table by species summary, but only for merchantable-sized trees. AR_04713-04898.

25. Seventh is the merchantable tree plot summary, which is the same as the plot-level summaries but only for merchantable-sized trees. AR_04444-04712.

26. Finally, eighth is the site tree summary, which subsets the complete tree list to include only those records which are identified as "site trees" and displays summaries of those trees for each unit. AR_05391-05469. This report is produced for a specific technical purpose: determining the "site index" of each unit. The site index is an expression of how fast timber volume will accumulate given environmental growing conditions, where larger values mean faster timber volume growth. Site trees are selected based on their quality for estimating this environmental characteristic, and so the ages of site trees do not represent the age of a stand in any meaningful way.

27. Documentation for interpreting the stand exam reports is also included in the Administrative Record. AR_04084-04115.

28. Plaintiffs argue that BLM mis-aged stands within the Blue and Gold Project Area. By Plaintiffs' statements in their summary judgment papers, it appears they assume that the correct stand age is the age of the oldest trees in a stand. However, as explained, the aging of a stand is based on the professional judgment of a BLM forester, and the stand age almost never equals the age of the oldest trees in the stand. Thus, Plaintiffs' allegations that BLM's stand ages are wrong is incorrect. I have reviewed the

age class data from the Blue and Gold project area and it shows that there is a consistent approach in how the BLM forestry staff assigned a stand age for each harvest unit based on the tree distributions. The stand age number is normally at the high end of the age range that contains most of the trees; but even that statement is an oversimplification of a complex process.

29. Furthermore, Plaintiffs' representations imply that the stand age (in their conceptualization, the age of the oldest trees in the stand) should set limits for actions that occur throughout the entire stand. However, this is incorrect because the RMPs' management direction sets limitations based on individual tree ages, not stand ages. Specifically, the management direction for the Harvest Land Base (HLB) land use allocation requires BLM to retain all trees that are both greater than or equal to 40 inches diameter at breast height and that BLM identifies were established prior to 1850, except where falling is necessary for safety or operational reasons. AR_07876, 07878, 07879. BLM correctly included this management direction in each action alternative to ensure compliance with the RMP. AR_00361.

30. As an example to substantiate their arguments, Plaintiffs provide an image of a map at T24S-R6W-S7 purporting to show "large areas of tree age dominance above 160 years with considerable amounts of 200 to 400-year-old forest." ECF 27, Plaintiffs' Summary Judgment Memo, p. 30; AR_01209. This image illustrates well how forest stands do not have a single

uniform age. The BLM placed the unit in this stand, 24-6-7C, in the 90-year age class (i.e., 85-94 years old). AR_00528. The image, which shows "age dominance" at a fine scale (pixel size is unknown, but appears to be less than 100 feet), displays areas within Section 7 ranging from 0 to 200 years old. The most common mapped age class is 40-80. These data are consistent with one another, and with BLM's stand aging process. The fact that individual old trees and patches of older forest exist within Section 7 does not in any way invalidate the statement than unit 24-6-7C is in age class 90. Furthermore, the RMPs place no limitations on the age classes of stands that can be entered in the HLB, only on the age of individual trees equal to or larger than 40 inches in diameter that can be harvested.

31. Additionally, the image provided by Plaintiffs displays data that is not appropriately applied to the question at hand. The data is derived from Oregon State University's Gradient Nearest Neighbor (GNN) maps. AR_01209. These maps are based on satellite data and are not appropriate to use at this fine scale. The publishers of the data state that the GNN map predictions are similar to plot-based estimates when aggregated at landscape-to regional-scales (tens of thousands of acres), and the smallest scale at which the publishers assess accuracy of the GNN map is greater than 20,000 acres (https://www.fs.usda.gov/pnw/pubs/pnw_gtr1018.pdf, Figure 10, pp. 21-22). Plaintiffs' image shows an extent of approximately 1,000 acres

and Plaintiffs make statements about features in the image that are at the scale of tens of acres and less. To this point, Plaintiffs represent their map as depicting HLB lands within a Blue and Gold harvest unit, but the map also includes Late Successional Reserve (LSR) lands that are intended to promote and maintain habitat for northern spotted owls and marbled murrelets and therefore, feature older stands. There are both HLB and LSR stands in T24-R6W-S7. Thus, the information that Plaintiffs purport to convey with the image is not reliable and the map does not support Plaintiffs' argument that HLB units have older stands than what BLM's data indicates

32. Plaintiffs reference their Exhibit 3 to ECF_25 to support their allegation that "25 percent [of the stands] are older than 200 [years], according to the agency's own data." [hereinafter Table 25-3]. Plaintiffs are incorrect. Table 25-3 contains marbled murrelet monitoring and reporting data that Roseburg wildlife biologists compiled for the purpose of documenting the District's compliance with the 2016 RMP's wildlife monitoring requirements R-26 and R-27. AR_07952. Each row in Table 25-3 represents a marbled murrelet survey polygon. Such a survey polygon would not match the borders of a timber unit and does not bear any relation to a "stand" as utilized for forest management purposes and as recorded in FOI. Table 25-3 includes columns titled "Age Range of Stand" and "Stand Age 1," "Stand Age 2," and "Stand Age 3," showing that the District intended to

integrate the FOI's concept of multiple vegetative layers into its wildlife monitoring. However, the Roseburg wildlife biologists did not fill out Table 25-3 as intended: for all rows, Roseburg only provided a single age for a single layer, rather than a range sorted into multiple layers. The ages listed appear to be the ages of the oldest trees in the stand, which is consistent with the notion that stand ages within marbled murrelet survey polygons are defined by wildlife biologists to assist them with wildlife monitoring. While foresters define stand ages in the FOI for forest management purposes and focus on the dominant timber trees, wildlife biologists described "stand age" in Table 25-3 to focus on the oldest age of the trees associated with marbled murrelet nesting habitat. In other words, "stand" in a survey polygon as applied in Table 25-3 means something quite different than the overall stand age of a timber unit.

33. Plaintiffs reference a February 2019 email exchange between their declarant and a BLM wildlife biologist in their Exhibit 4 to ECF_25 to support their allegation that BLM relied on incorrect FOI stand ages. [hereinafter 25-4]. The emails Plaintiffs rely on however, do not support this allegation, but rather are discussing how BLM wildlife biologists determine and classify habitat type for northern spotted owls and marbled murrelets. *See* 25-4, p. 79-80. To identify locations of suitable or capable wildlife habitat in the District Habitat layer, the Roseburg wildlife biologists first utilize a

geospatial habitat layer that was originally built from several data sources including FOI; they treat that layer as a preliminary guide, prior to performing field assessments. *See* AR_00985 ("Originally classified base[d] upon stand age, habitat classifications have been modified based upon field review by the field office wildlife biologist and/or wildlife technicians."). The emails at 25-4 do not identify inaccuracies in the stand ages of the Blue and Gold project; rather, they discuss how BLM wildlife biologists review and update the District Habitat layer for wildlife habitat classifications.

34. Plaintiffs in their summary judgment filings argue that it would not be possible for BLM to harvest the stated amount of timber volume in the Blue and Gold Project without violating the RMPs by cutting trees equal to or larger than 40 inches in diameter that were established prior to 1850. In fact, the estimated harvest volume for Blue and Gold is approximately 25 percent of the total standing volume within the units planned for treatment. AR_00545; AR_00527-00528. By analysis of the stand exam data, I estimate that well over 80 percent of the standing volume is accounted for by trees that are less than 40 inches in diameter or established later than 1850. Thus, Plaintiffs' argument is clearly incorrect.

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 18, 2025, in Salem, Oregon.

SEAN JERONIMO

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Sean Jeronimo